While recording in upland Lanarkshire (VC 77) in July 1998 we saw Alpine Bistort (*Persicaria vivipara*) on Gana Hill (26/95.01), just short of the boundary with Dumfriesshire (VC 72). The plant was in small quantity on grassland, just beyond a rocky outcrop at approximately 600m above sea level.

Alpine Bistort is a plant of grassland and rock-ledges on mountains, occurring particularly in the Highlands of Scotland and in northern England.

In the *Atlas of the British Flora*, Perring & Walters (1962) give three pre- and two post- 1930 records for the south of Scotland. The pre- 1930 occurrences were in Lanarkshire, Peeblesshire (VC 78) and at the boundary between Peeblesshire and Midlothian, while one post- 1930 record was at the boundary between Kirkcudbrightshire (VC 73) and Ayrshire (VC 75) and the other at the junction of Dumfriesshire, Peeblesshire and Selkirkshire (VC 79). All but one of these records are from relatively high ground. The source of the pre- 1930 record for Lanarkshire is the British Association Handbook (1901) which states "Falls of Clyde" without further information relating to localisation, year of discovery or name of recorder. In some respects it seems to be an unlikely site for the plant and therefore a dubious record. Our record is certainly the first for almost 100 years and might well be an actual new vice-county record.

Mackechnie (1958) considered it unlikely that spectacular botanic discoveries would be forthcoming in the future from Southern Upland Lanarkshire. However, Watson and Macpherson (1999) report three new vice-county records from that area and we consider it not unreasonable to claim Alpine Bistort as a fourth.

We are grateful to Messrs C. D. Preston and A. McG. Stirling for help in localising the previous records.

References

British Association Handbook (1901).

Mackecknie, R. (1958). Plant recording in Clydesdale. *Glasgow Naturalist* 18, 3-14.

Perring and Walters (1962). Atlas of the British Flora. Thomas Nelson & Sons, London.

Watson, K. & Macpherson, P. (1999). Plant recording in upland Lanarkshire (VC 77). *Glasgow Naturalist 23* (4), 26-8.

Cape-gooseberry and Tomatoes on the shore near Helensburgh

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The shore at Craigendoran to the east of Helensburgh, Dunbartonshire, has proved in most years to be a good site for self-sown tomato plants resulting from sewage-borne seed. Several times in the late summer of 1998 a short stretch of shingle shore just west of Craigendoran Pier was examined. Tomatoes of shapes not usually found in the shops frequently occur along this coast, including rib-sided and small cherry types.

As the fruit ripened, one day an unusual plant was seen, and closer inspection revealed about nine similar individuals. Reference to 'Stace' seemed to point to its being *Physalis peruviana* (Cape-gooseberry) and this was confirmed by Mr Eric Clement to whom we sent a specimen. Like the tomato (*Lycopersicon esculentum*) the *Physalis* is a member of the Solanaceae. Another member of the genus is *P. alkekengi* (Japanese-lantern) introduced and grown here for its ornamental inflated calyces.

We have not traced any previous Scottish records.

Adder's-tongue Fern in Dunbartonshire

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Since moving to Milngavie three years ago we have been delighted by the appearance in our lawn of one plant of Greater Butterfly Orchid (*Platanthera chlorantha*) and an increasing number of Common Spotted Orchids (*Dactylorhiza fuchsii*) - five in 1997, eight in 1998.

In the spring of 1998, while hunting for further non-flowering orchid plants, I also discovered two specimens of Adder's-tongue (*Ophioglossum vulgatum*). My identification was confirmed by Prof. J. H. Dickson and seems to be the only known site in Dunbartonshire, VC 99. Unfortunately the larger plant had been damaged by my earlier attempts at keeping the grass under control, but we have now marked the area in the hope that the numbers will increase in years to come.

Our house was built about 19 years ago and what we are seeing appears to be a reversion to the previous natural flora.

A digenean parasite, *Diplostomum phoxini* (Faust, 1918), in the brain of minnows from Loch Morar, Inverness-shire

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This note reports the occurrence of a larval metacercarial stage of a digenean parasite in the brain of minnow, *Phoxinus phoxinus* L., from Loch Morar, Inverness-shire, Scotland's deepest loch at 630m with a length of 18km (56°55'N, 5°30'W). Thirty minnows (50-70 mm length range) were collected from the loch in July 1996 using bottle traps and transferred for display in aquaria at Mallaig Marine World.

Sixteen weeks following transfer (29 November 1996) fish were seen to swim erratically, had a dark appearance and began to die at the rate of 1 to 2 mortalities (c.3% of stock) per week. All fish had died from the metacercarial infection by 9 May 1997. Fish were examined using a x40 binocular microscope. Bacteriological samples were taken from the kidney. For histological investigation of gills and vital organs, material was fixed in 10% neutral buffered formalin, embedded in wax, sectioned at 5µm and stained in haematoxylin and eosin.

Gross and histological examination revealed the presence of the tapeworm *Ligula intestinalis* (L.) of up to 70 mm length in the body cavity of 5 of 7 minnows examined on 15 April 1997. No other parasites were seen in examination of fresh samples and no pathogens were identified from bacteriological inocula. Metacercariae (*Diplostomum* genus) were observed in the brain tissue, mainly the medulla oblongata, of all 7 minnows examined (100% prevalence), an average of 4.7±0.5 SD in each cross section (Fig. 1). From the histological material and fresh samples digeneans were identified as *Diplostomum phoxini* (Faust, 1918) (Barber & Crompton, 1997 a, b). Sectioned specimens had a mean length of 283±47 µm and breadth of 153+12µm. No pathology was seen in any of the other organs examined.

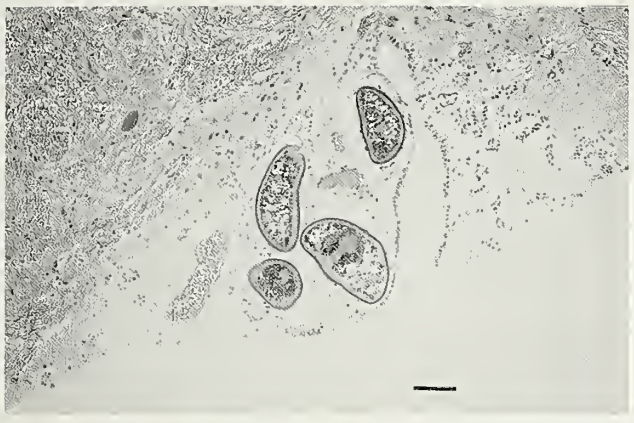

Fig. 1. Section through a brain of minnow showing *Diplostomum phoxini*. Scale Bar=100 μm.

Diplostomum phoxini was first recorded in the British Isles by Ashworth and Bannerman (1927) who described specimens from minnows from a stream near Edinburgh and Loch Lubnaig, Stirlingshire. Other records of *D. phoxini* in the British Isles (cited in Kennedy 1974) are from the River Clyde, Loch Leven, Loch Eck, Loch Lomond, Frogoch Lake, Wales, the Royal Canal and River Main, Ireland and the River Roding, Essex. The infection dynamics of *D. phoxini* were described in the R. Endrick, Stirling District and in Loch Maragan in the central highlands (Barber & Crompton, 1997 b). From examination of serial histological sections metacercariae of *D. phoxini* were found to be mainly distributed in the cerebellum, medulla oblongata and the optic lobes, areas implicated in the control of the host's antipredator response. This would enhance the possible of transmission to the final host.

The present record in minnows from the Scottish highlands indicates the wide distribution of the parasite in minnows in the British Isles. Minnows are the second intermediate host in the life cycle of *D. phoxini* and become infected when cercariae are released from the lymnaid snails and penetrate the fishes' skin (Barber & Crompton, 1997, a). Although a range of vertebrates has been used as definitive hosts, piscivorous birds, usually gulls (Laridae), are the main definitive host in natural habitats (Yamaguti, 1958) and these become infected by eating infected minnows. The adult trematodes produce eggs which pass with faeces from the host and, on hatching, free-living miracidia larvae are released, infecting snails, the first intermediate host (Barber & Crompton, 1997, b).

I am grateful to Ross Campbell and Sheila Henderson of Mallaig Marine World for providing samples and assistance during the study.

References

Ashworth, A. W. & Bannerman, I. C. W. (1927). A tetracotyle in the brain of Minnow. *Transactions of the Royal Society of Edinburgh* 55, 159-173.

Barber, I. & Crompton, D. W. T. (1997 a). The distribution of the metacercariae of *Diplostomum phoxini* in the brain of minnows, *Phoxinus phoxinus*. *Folia Parasitologica* 44, 19-25.

Barber, I. & Crompton, D. W. T. (1997 b). The ecology of *Diplostomum phoxini* infections in two minnow *(Phoxinus phoxinus)* populations in Scotland. *Journal of Helminthology* 71, 189-196.

Kennedy, C. R. (1974). A checklist of British and Irish freshwater fish parasites with notes on their distribution. *Journal of Fish Biology* 6, 613-644.

Yamaguti, S. (1958). *Systema Helminthium*, volume 1. The digenetic trematodes of vertebrates. 1575pp, New York, Interscience.

Notes on the Marine Tardigrade *Megastygarctides seteloso* Morgan and O'Reilly, 1989

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The Tardigrades, or Water-Bears, comprise a phylum of minute arthropod-like animals common in aquatic environments or on the surface water film of terrestrial mosses. Marine species are relatively few in number with only 16 recorded from British waters. The tardigrade fauna of the Clyde Sea Area was described by Morgan & Lampard (1986) and a revised key to all Scottish (and UK) marine species was provided by Morgan & O'Reilly (1989).

The most recently described British species, *Megastygarctides seteloso*, is known only from the holotype male specimen collected in the Summer Isles, North West Scotland, in July 1985. The opportunity is taken here to provide notes on its discovery and to further illustrate aspects of its morphology based on a re-examination of the holotype.

The single specimen of *M. seleloso* was recovered from a scoop of surfaces and collected by a diver at 16 m depth in The Anchorage, Tanera Mor. The sampling was being undertaken as part of a programme to study benthic harpacticoid copepods, especially of the genus *Haloschizopera* (see Moore & O'Reilly 1989, 1993). The sample was fixed with 4% formaldehyde and subsequently elutriated onto at 45μm sieve. The elutriate residue was sorted, by the present author, on a stereo microscope to remove copepods and during this process a tiny tardigrade was noticed. This was sent to Clive Morgan who confirmed it as a new species of the genus *Megastygarctides*. Hitherto only two *Megastygarctides* species had been described, both from the Pacific Ocean: *M. orbiculatus* McKirdy *et al.*, 1976 from the Galapagos Islands, and *M. isounguis* Renaud-Mornant, 1981 from New Caledonia.

In view of this interesting find a thorough re-inspection of the sample residue was undertaken by Dr Morgan in 1986. Several specimens of another tardigrade, *Halechiniscus perfectus* Schula, 1955, were recovered, this species being previously unknown in Scottish waters, but no further specimens of *M. seteloso* came to light and none have been recorded since.

A full description of *M. seteloso* was provided by Morgan & O'Reilly (1989) accompanied by a morphometric comparison with the two Pacific species. However, the illustration contained a minor inaccuracy with respect to the positioning of the posterior clava and lateral cirrus A, and the dorsal view displayed only the posterior pair of legs. The arrangement of the clavae as well as the structure of the legs are critical taxonomic characters in tardigrades and for this reason the habitus of the holotype is re-figured to exhibit and clarify these features (Fig. 1).